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CROSSING METACOGNITIVE AWARENESS IN UNIVERSITY STUDIES: AN EMPHASIS ON BELIEFS

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Abstract

Purpose – Initially, this cross-cultural comparison paper aimed to compare and contrast lecturers' and learners' beliefs about learners' level of metacognitive awareness and related subcomponents in Lithuanian and Iranian university studies. Additionally, it looked at investigating lecturers' justifications for assigned students' level of metacognitive awareness.

Design/methodology/approach – Two instruments were applied. Firstly, a researcher-created questionnaire was developed to collect data from 20 Lecturers to analyze trends in the lecturers' beliefs about their students' metacognitive awareness. Secondly, Schraw and Dennison's (1994) metacognitive awareness inventory was completed by 755 students to access their metacognitive awareness. Mixed methods research combined with quantitative and qualitative methods was appropriate for this study. The quantitative data was collected from the Likert scale parts of the researcher-made questionnaire for the lecturers and whole parts of the questionnaire for the students. Both descriptive and inferential analysis were done. The lecturers' written responses to the open-ended questions were analyzed applying deductive qualitative content analysis using an iterative approach. It was a recursive process in which the data were reviewed to determine the major themes in the written responses by the researcher and 3 raters.

Finding – By comparing and contrasting the lecturers and the students' beliefs about the students' subcomponents levels of metacognitive awareness, we realized that both Iranian and Lithuanian lecturers' and Iranian student's beliefs regarding the sequence of knowledge of regulation subcomponents from the strongest to the weakest were the same (Declarative, Procedural and conditional) while Lithuanian students believed that they had a higher level of declarative knowledge and a lower knowledge in procedural subcomponents. By comparing the Lithuanian and Iranian lecturers' beliefs with their students' beliefs, we can realize that both of them considered monitoring and debugging weaker than planning and evaluation. Both Lithuanian lecturers and Lithuanian students considered the level of metacognitive awareness as medium. Furthermore, among the three detected key themes categorized by 3 raters through deductive content analysis from lecturers' responses for the reasons for determined students' level of metacognitive awareness, "students' characteristics" was considered as the main reason for both groups.

Research limitations/implications – The first limitation is the use of questionnaires where various methods such as think aloud or interview can be applied as well. Another limitation is that the number of lecturers was limited which can influence the generalizability of findings. Finally, the sample size for both groups of lectures and learners was randomly selected from Tehran and Vilnius which is not appropriate for overgeneralizing to other cities.

Practical implications – It not only contribute to both lecturer and student development of metacognitive awareness but also guides the design and implementation of future metacognitive awareness programs for lecturers. The findings can increase lecturers' pedagogical knowledge which is associated with their practices

Originality/Value – Despite the fact that learner metacognitive awareness at university studies is gaining momentum as an educational phenomenon, there is very little simultaneous and

comprehensive research globally on assessing students' beliefs and identifying those of lecturers about the students' subcomponents level of metacognitive awareness. Therefore, the research is new and unique since no research has compared and contrasted lecturers' and students beliefs about the topic in both contexts of study.

Keywords: Metacognitive awareness, Regulation of cognition, Beliefs, University Studies, Iranians, Lithuanians.

Research type: research paper.

Introduction

A high level of Metacognitive awareness in a learner is broadly acknowledged as the most valuable qualification for successful learning since it can help learners to take control of their learning, realize how to learn, manage the process of learning from planning to assessing with the support of their teachers. It is becoming as a tool for learners to adopt not only to educational demands but also to general concerns of life which cannot be developed in traditional teaching which limits the context of learning (Schraw & Dennison, 1994; Schraw et al., 2012). Moreover, the poor level of metacognitive awareness is not enabling learners to participate in the modern multilingual society. In fact, sociological perspectives emphasized on the effect of context, including globalization and global economy, not isolation of this process (Richard, 2007).

Beliefs have significant effects on driving one's actions, utilizing metacognitive awareness strategies (Bullock, 2010) and accepting and rejecting new information and how knowledge is employed (Borg, 2009, 2015, 2018; Mansour, 2013; Pajares, 1992). Despite the interlocked complex and dynamic process of learning and teaching, a clear connection emerged between lecturers and learners' beliefs. Beliefs also have a connection to the level of expectation from learning and teaching (Bernat, 2008) and class practices (Borg, 2009; Bullock, 2010; Mansour, 2013; Pajares, 1992; Zheng, 2013). According to Bernat (2008) and Eliss (2008) the students' beliefs can be reformed by teachers' beliefs which is essential for eradicating students' misconception and improving their learning.

The significance of assessing metacognitive awareness as an essential factor in university studies, on one hand, and the necessity of understanding the nature of lectures' beliefs about students' metacognitive awareness and students' beliefs in this regard, on the other hand, have been the impetus for the researcher to conduct this study. Previous researches stipulated that there are few empirical ones globally about finding the similarities and differences between teachers' and students' beliefs. Besides, this concept is a relatively unexplored area in Iranian and Lithuanian university studies. The purpose of this paper is initially to compare and contrast lecturers' and students' beliefs about the levels of students' metacognitive awareness and related subcomponents in both Lithuanian and Iranian university studies and secondly to investigate the lecturers' justifications for assigned metacognitive awareness students' level.

The research object is crossing the beliefs about metacognitive awareness in university studies.

The following research questions arise:

RQ1. How do Lithuanian and Iranian lecturers' beliefs about students' level of metacognitive awareness differ/compare with those of university students?

RQ2. How do lecturers justify their assigned level of metacognitive awareness to their students?

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The impetus for conducting this comparative research has come from both personal interest of the researcher as an Iranian national doing her research in Lithuania and the significance of contextual factors, which has impact on global research. While globalization helps us achieve the latest information across the globe, we can investigate and solve different educational and learning problems from an international-comparative perspective. The Iranian and Lithuanian students and lecturers are different from each other culturally, linguistically and socially which all of them are effective factors on learning process. Therefore, finding out similarities and differences between the metacognitive awareness beliefs of both lecturers and students in university studies of these two countries assists us to reach precious information to improve learning in both these two settings and other university contexts globally.

Literature review

Learners' and teachers' beliefs

Beliefs as a confusing and messy concept affect making sense of the world, perceiving, accepting and rejecting new information and how knowledge is employed (Borg, 2009, 2015; Mansour, 2013; Pajares, 1992). Understanding one's beliefs needs inference being made about the underlying mind state of that person such as one's saying, intention and behavior consciously or unconsciously which is not an easy task since that person may be unable or unwilling to express one's beliefs (Borg, 2009; Bullock, 2010; Mansour, 2013) that causes inconsistency between beliefs and practices (Mansour, 2013).

Students' beliefs in the field of learning indicate an overall picture of their expectation from the learning process (Bernat, 2008). Beliefs can be shaped according to the students' personal practices, evidences, rules originated from any method or approach and personality and brought to the class. Assessing the students' beliefs can assist teachers not only to reflect on their teaching and modify it in a creative way based on their students' requirements and expectations but also to guide the students to get rid of their detrimental notions in learning (Bernat, 2008; Eliss, 2008). If there is a systematic metacognitive awareness program imposed by the University for teaching, it will be finally the lecturers who intentionally or unintentionally bring or reject it based on his beliefs. Teachers' beliefs are considered as their educational or pedagogic beliefs on their teaching (Pajars, 1992; Borg, 2009, 2018). Successful experience in teaching makes a positive effect on the sense of efficacy and engage the teacher to repeat the same behavior in teaching (Bullock, 2010). Beliefs are associated to the teacher's social systems, economic and political situations, class observation and experience, selections of objectives in the class, what language he thinks, acts and believes and the level of consciousness (Bullock, 2010). Teachers' actions habitually or spontaneously are driven by their deep-rooted beliefs more than determined methodology and course book that they have to follow. Teachers' beliefs and their expectations from students are closely connected to each other and many students perform in the manner that their teacher even unintentionally and non-verbally expect them to perform. (Hornstra, et al., 2010; Klehm, 2013; Rosenthal, 1997). Base on Rosenthal's (1997) affect-effect theory, the teacher's level of expectations of their students' performance have a direct influence on both the students and ones' own effort for teaching quality. In fact, any class can enjoy merits of not only climate which is the teacher's effect but also those of input, which is training qualification (Rosenthal, 1997; Woodrock & Vialle, 2011).

Some researchers (Borg & Al-Busaidi, 2012; Mansour, 2013; Zheng, 2013) found that always beliefs and practice do not coincide while others indicated that teachers' beliefs have a

great impact on their class practices (Borg, 2009; Bullock, 2010; Mansour, 2013; Pajares, 1992; Zheng, 2013).

Metacognitive awareness beliefs, knowledge and practice

There have been some researches on the links between teacher knowledge, beliefs and practices on metacognitive awareness. Buehl and Fives (2009) implicitly found these links after gathering data from both informal sources consisting of personal experience, observation and reflection and formal sources containing academic research through an open-ended questionnaire from 100 teachers. Their findings were in line with Pajares (1992) findings that the formal sources lead to more accurate and less noticeable in any context than the informal ones. Wilson and Bai (2010) through a questionnaire data gathering from 105 teachers investigated that their metacognitive awareness impacted their understanding of how to teach metacognitive strategies and their teachers had a good understanding of the metacognitive awareness concept. Spruce and Bol (2015) and Kistner et al (2010) administered questionnaires and interviews and observed a classroom with teachers. They could not find a consistent alignment among teachers' beliefs, knowledge and class practice regarding metacognitive awareness. Their findings suggested that though teachers' beliefs were positive about metacognitive awareness, their related knowledge and actual practices in the class was low. They practiced monitoring greatly in the class yet not goal setting and evaluation. Taylor and Ntoumanis (2007) in their studies highlighted the influence of teachers' beliefs and expectations on their applied metacognitive strategies in their classroom. Bidabadian & Tabatabaei (2015) in their researches on 60 EFL male and female Iranian lecturers with teaching experience ranging from 5 to 25 years in different universities about the construct of their beliefs system regarding different writing strategies discovered that they took into account mostly compensational and social strategies of writing and ignored metacognitive strategies.

Methodology

Research Participants. Student participants, who were selected randomly, totaled 755 undergraduate students, 296 from 3 universities in Vilnius (Lithuania) and 459 from 3 universities in Tehran (Iran). For lecturers, 10 lecturers from MRU in Vilnius and 10 from Azad University in Tehran, where randomly selected to participate. The demographic profile of the participants in the two groups were similar, given that the populations had the same background in gender, age, teaching experience, teaching courses and fields of study.

Tools. The students completed a questionnaire, named MAI, developed by Schraw and Dennison (1994) to measure metacognitive awareness. It consisted of 52 items classified into eight sub-components subsumed under two broader components: knowledge of cognition with 3 sub-components of procedural knowledge, declarative knowledge and conditional knowledge, and regulation of cognition with 5 sub-components of information management strategies, debugging strategies, planning, comprehension monitoring and evaluation.

Furthermore, the data for lecturers was collected using the researcher-created instrument with strategies designed by Schraw & Dennison (1994) with two parts. To identify lecturers' beliefs about the level of metacognitive awareness of their students, parts 1 and 2 were designed. There were 16 statements, two for each metacognitive awareness subcomponent for Q.1. Q2 was asking about "How do lecturers justify their assigned level of metacognitive awareness for their students?"

Piloting phase. 833 students and 80 lecturers with the same characteristics of the real participants of this study completed the related questionnaire to check the validity and reliability. Cronbach alpha reliability of both questionnaires was calculated and they were reliable.

Procedure. The quantitative data was collected from the Likert scale parts of both questionnaires. The data was coded for descriptive and inferential analysis. For qualitative analysis, first the written responses to the open-ended questions were analyzed applying deductive qualitative content analysis. It was a recursive process in which the data was reviewed to determine the major themes (Krippendorf, 2013). Only one participant from the Lithuanian group did not reply to all open-ended questions.

Data analysis and results

Comparing and contrasting lecturers' and students' beliefs about the level of students' metacognitive awareness

Both questionnaires had five likert options of "strongly agree", "agree", "neutral", "disagree" and "strongly disagree" which were given values from 5 to 1 respectively. Then, the sum of values for each item was calculated and divided by the number of participants. The results were presented in Table 1. The criteria for judging medium level of students' metacognitive awareness level for knowledge of cognition, for instance, based on both lecturers groups (Iran=3.25, Lithuania=3.3) and Lithuanian students (2.71) is the mean range between 2.5 to 3.4 while Iranian learner's metacognitive awareness levels were low (2.27).

Table 1. Knowledge of cognition and regulation of cognition descriptive statistics for lecturers and learners of both groups

Metacognitive Awareness Components	Number of Students Ir/Lt	Mean	Std. Deviation	Number of Lecturers Ir/Lt	Sum of Scores	Mean
Knowledge of cognition	456/296	2.27/2.71	.698/.348	10/10	195/200	3.25/3.3
Declarative	459/296	2.32/2.77	.827/.405	10/10	85/80	4.25/4
Procedural	459/296	2.25/2.66	.837/.588	10/10	60/65	3/3.25
Conditional	459/296	2.22/2.67	.777/.504	10/10	50/55	2.5/2.75
Regulation of cognition	459/296	2.20/2.68	.652/.260	10/10	305/340	3.05/3.4
Planning	459/296	2.24/2.71	.761/.458	10/10	70/85	3.5/4.25
Information Management	459/296	2.23/2.64	.743/.402	10/10	65/65	3.25/3.25
Evaluation	459/296	2.19/2.76	.832/.515	10/10	65/80	3.25/4
Comprehension	459/296	2.13/2.67	.683/.475	10/10	55/60	2.75/3
Debugging	459/296	2.20/2.63	.770/.572	10/10	50/50	2.5/2.5

As can be seen in table 1, any mean lower than 2.5 was considered as low and higher than 3.4 as high level of metacognitive awareness for other subcomponents as well. Also, Figure 1 illustrated the mean scores depicted in the previous table.

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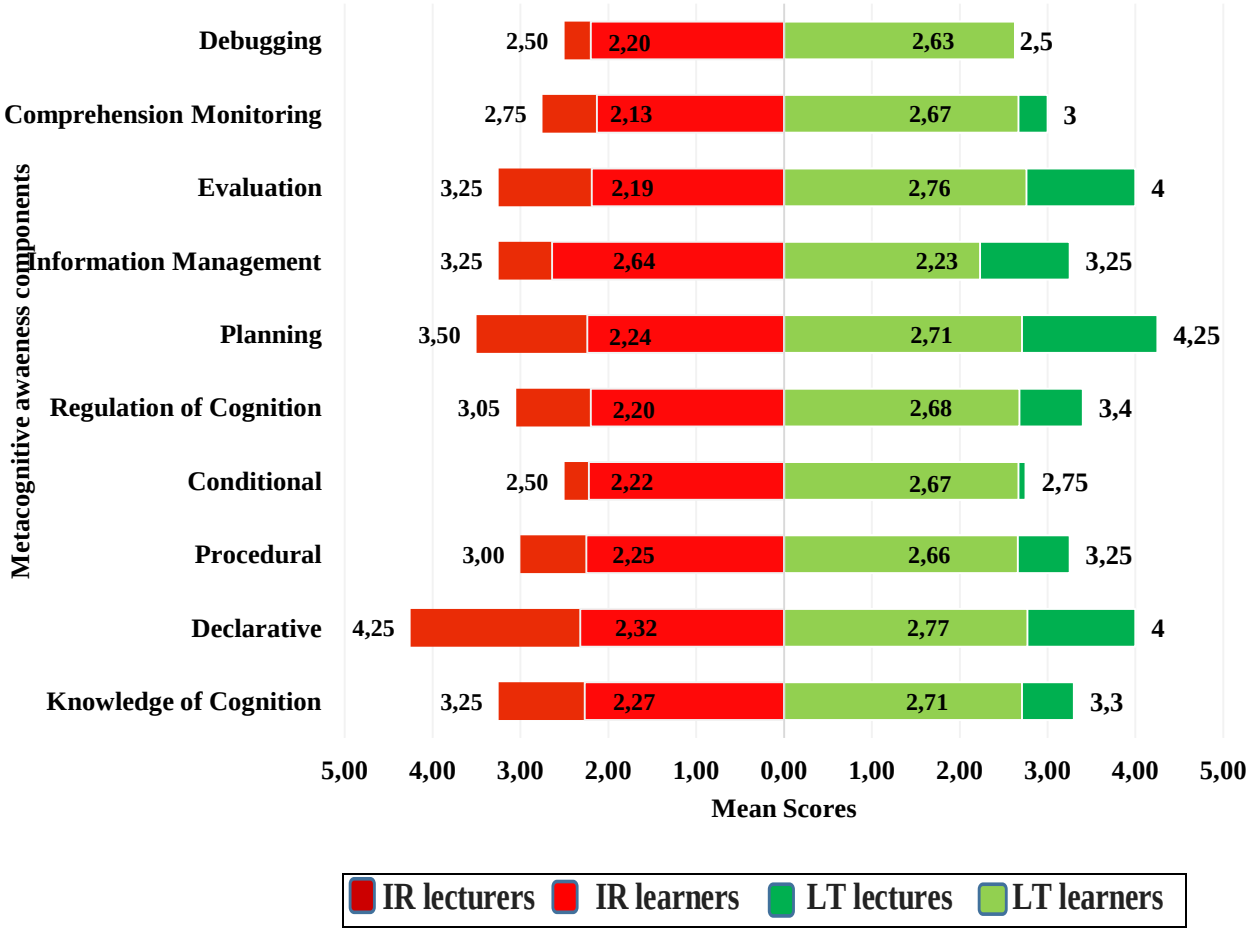

Figure 1. Mean Values of Metacognitive awareness components for Iranian and Lithuanian Lectures and learners

As can be depicted in Figure 1, declarative mean scores had the highest mean scores among the knowledge of cognition subcomponents in all groups (IR lecturers=4.25, IR learners=2.32, LT lecturers=4 and LT learners=2.77).

Lecturers' justifications for assigned metacognitive awareness students' level

The lecturers' statements in reply to open-ended questions of what your justifications are for assigned metacognitive awareness students' level were presented in Table 2.

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Table 2. Lecturers' justifications for assigned students' level of metacognitive awareness

Lecturers' Statements	Justifications for Determined Students' Level of Metacognitive Awareness		
	Students' Characteristics	Lecturers' Characteristics	Characteristic of Process
I assume that metacognitive awareness is a more advanced as an intuitive skill with some more gifted students, with the students who have problems in my subject, I think, the learning capacity and self-reflection is not developed in the same way. Their metacognitive skills are less developed in my subject.			+
Sometimes they really are aware of the best strategy, sometimes they totally forget about it.	+		
I have chosen medium as students' awareness depends on the task and on the group. There are cases when they are active, understand the task and are inquisitive and eager to learn.	+		+
Nowadays students are conscious and smart to evaluate whether teaching strategies are effective and teaching / learning process is being successful.	+		
I find that many university students already know themselves and the better ways of learning which suit them personally	+		
Sometimes they are quite conscious of what they are doing; sometimes they are not.	+		
I think so because of their work and my assumption that they rarely think in-depth about their metacognitive strategies.	+		
Students are very different, so it is difficult to generalize. But in every group there are some students whose metacognitive awareness is really high. I have described namely these students.	+		
It depends on the class.	+		
Lithuanian frequency of chosen justification 10	**9**	**0**	**1**
Percentage of chosen justification 100%	**90%**	**0%**	**1%**
Some are really good in using augmentative awareness and only a few students know nothing about it.	+		
Some of my colleagues and I sometimes motivate the students to become self-regulated through instruction then we find out that they are trying to use more metacognitive strategies.		+	
They have sometimes critical thinking.	+		
Some students in each class of mine consciously and unconsciously use metacognitive strategies. Some even do not know anything about it.	+		
We have many students with good performance and academic achievement that apply these strategies consciously or automatically.	+		
They can have higher level of metacognitive awareness if we consider their emotional factors, interest, motivation and so on, which are associated with confidence and the level of success in learning.		+	
Half of the class is good at it and half is not. In most of my classes, the students are looking for a higher competence so they believe in their goals and interests so they are motivated enough and these are factors to have higher metacognitive awareness.	+		
I have both experienced and unskillful learners in my classes somehow equally.	+		
Sometimes they use metacognitive awareness strategies sometimes not.	+		
Iranian frequency of chosen justification 9	**7**	**2**	**0**
Percentage of chosen justification 100%	**77.8 %**	**22.2 %**	**0%**

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As it can be detected in table 2, it was found through deductive content analysis of responses that all of them could have been categorized under three themes of "characteristics of the students", "characteristics of the lecturers" (what they did in the class) and "characteristics of the metacognitive awareness process". One score was given to the participants' responses for mentioning any theme. Both groups mostly considered "students characteristics" as the main reason for the metacognitive awareness level they assigned to their students (See Figure 2).

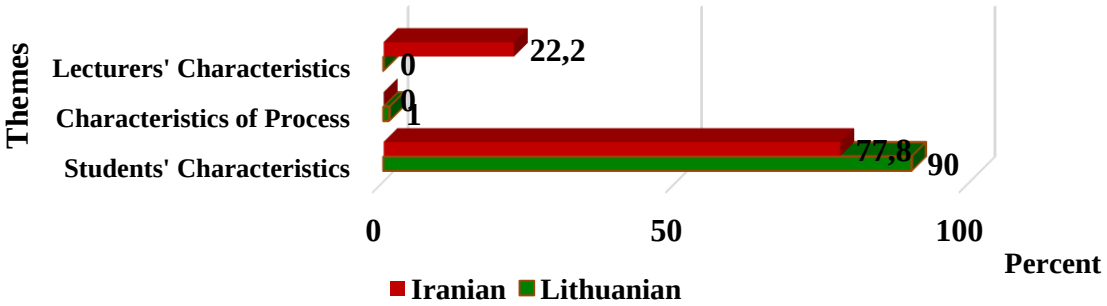

Figure 2. Themes related to lecturers' reasons for assigned level of metacognitive awareness to their students, 100%

It can be concluded from Figure 2 that the highest theme stipulated by the lecturers was "students' characteristics". "Lecturers' characteristics" and "characteristics of process" themes were ignored or considered slightly.

Discussion

The sequence of strongest to weakest knowledge of cognition subcomponents according to Iranian students' and both Iranian and Lithuanian lecturers' beliefs was declarative, procedural and conditional while the sequence of those of Lithuanian students was declarative, conditional and procedural. The regulation of cognition subcomponents of both lecturers' groups had a very similar pattern, while Lithuanian lecturers had lower scores in information management and debugging, their counterpart group had lower scores in monitoring and debugging respectively. In fact, Lithuanian students considered themselves weaker in information management and debugging than in the other subcomponents, which revealed that Lithuanian lecturers should increase their practical activities with these subcomponent strategies in mind. The Iranian students' beliefs about their own weakest subcomponents were somehow on the same wavelength as their lecturers' beliefs. Therefore, Iranian lecturers should focus on teaching and arranging their class activities more on monitoring and debugging strategies rather than other strategies. Our finding is not congruent with Spruce and Bol (2015) and Kistner et al (2010) investigations that their lecturer applied highly monitoring strategies but not planning and evaluation and with that of Bidabadian & Tabatabaei (2015) findings that their teachers did not apply any metacognitive awareness.

Both lecturers' groups and Lithuanian students evaluated the students' level of metacognitive awareness as medium while Iranian students considered their level to be low, which conveyed their level of expectations as well. This finding is in agreement with Hornstra, et al. (2010) and Woodrock & Vialle (2011) results and Rosenthal's (1997) affect-effect theory that confirmed that teacher's beliefs and expectations may be unintentionally and non-

verbally transferred to the students. Therefore, teacher can express his high expectation with a positive tone to enhance students' motivation and self-efficacy and get to mastery rather than only teaching the content and hope for the best with considering each student's strengths and requirements (Levy, 2008).

The reasons for the Iranian students' underestimated level might be due to lack of self-esteem or motivational and emotional factors which self-efficacy based on Bandura (1997) or the inconsistency between beliefs and practice (Borg, 2009; Bullock, 2010; Mansour, 2013) which can be the base for further research. Bandura (1997) further stated that "a sense of efficacy enables individuals to do extraordinary things by productive use of their skills in the face of overwhelming obstacles" (p.37).

Since the most frequent theme related to reasons for determined students' metacognitive awareness level based on both group lecturers' beliefs was connected to "students' characteristics", the lecturers should also consider their own preparation and seek more training in this area. It should be notified that we could not find any social perspective among their comments such as learning in pair and groups, as if they ignored the role of collaborate working as socially mediated learning for promoting metacognitive awareness. Furthermore, nothing can be explored regarding the power to control ones' learning and situation such as decision-making. In addition, there is no sign of considering the role of a teacher in fostering metacognitive awareness. They ignored that lecturers had a responsibility to help learning. Also, no lectures defined anything related to age limit, cultural hindrances and learner/learning-centered environment. There was not found any sub-theme found that reflected any cultural differences between the beliefs held by Lithuanian and Iranian participants.

Conclusion

The metacognitive awareness findings in this study provide significant information for educationalists and lecturers how their students could take control of their learning and a variety of metacognitive strategies that the learners apply or ignore while learning in both Lithuanian and Iranian university studies.

Although both lecturers' groups and Lithuanian students reported metacognitive strategy mean scores, applied by the students, fall into the medium range, Iranian students' group claimed that their metacognitive strategy mean is low. In our study, the sequence of the knowledge of cognition subcomponents from the strongest to the weakest in Lithuanian students' group was declarative, conditional and procedural while the sequence of those of both lecturers' groups and Iranian students was declarative, procedural and conditional. It should be notified that in Lithuanian students' group, there was very small difference between the mean score of conditional knowledge and that of procedural one. The majority of the students' highest application of strategy was in association with planning while debugging strategy had the lowest frequency among the strategies used by the students. According to both the lecturers' and learners' beliefs in each group, Lithuanian students had lower scores in information management and debugging while their Iranian counterpart had lower scores in monitoring and debugging.

The finding regarding the most frequent theme based on both Lithuanian and Iranian lecturers' beliefs for the reason for assigned students' metacognitive awareness level was "students' characteristics". "Lecturers' characteristics" and "characteristics of process" themes were ignored or considered slightly. This implies that lecturers should not avoid their own role in teaching the metacognitive awareness learning process in the classroom.

According to the above findings, we can conclude that both lecturers' groups can have more emphasis on teaching conditional knowledge. Lithuanian lecturers with more emphasis on practical activities related to information management and debugging strategies and Iranian lecturers with more focus on monitoring and debugging strategies can make the discussion of metacognitive awareness strategies as a part of the everyday discourse of the classroom. This will assist peers and teachers share related information and help students to talk about their own cognition and learning process. In fact, there will be more concentration on the role of teachers on improving the learning process in the classroom. Another lecturers' reflection can be modeling of strategies, accompanied by explaining them and the reasons for applying them for solving any specific problem. Consequently, they can foster metacognitive awareness more with collaborate activities as socially mediated learning.

The outcomes of this research are essential in many other ways. First, the data created a possibility to scrutinize the similarity and differences among students and lecturers beliefs in both contexts. Generally, the obtained results from two lecturers' contexts are consistent with each other while the settings are not close in proximity and culture and is not according to some posited literature that culture affects learning and metacognitive strategy application. This conveyed that the resident culture did not limit the metacognitive awareness. Second, this research can contribute to broadening the related literature exploring the contexts that varied from previous studies. Third, we discovered the interlocked complex and dynamic process of learning and teaching. As the result, in spite of this complexity, a clear connection emerged between lecturers and learners' beliefs.

The following recommendations have been furnished to contribute the development of learners' metacognitive awareness in the settings under study: 1. The results gained can contribute to detecting obstacles and find out how to navigate around them in the field of teaching and learning metacognitive awareness and assist the learners to look at learning as problem solving exercises to deploy the most suitable metacognitive strategies. 2. Since introducing metacognitive strategies and making them a natural part of the learning process are time-consuming, it gives sufficient time to learners to adjust to the new learning environment especially for those who came from teacher-centered approach classes to adopt to a learner/learning-centered approach and break down the previous educational habits. 3. The revision of the current curriculum, teacher and learner training and examination system is required based on consideration of the findings taking into account both learners' and teachers' beliefs about metacognitive awareness. 5. Prolonged and in-depth class observation and triangulating data from various sources which is gathered through different types of tools of measurement is needed.

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